



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,453	12/03/2003	Takeshi Takizawa	SON-2870	4032

23353 7590 11/15/2005

RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER

THOMAS, BRANDI N

ART UNIT	PAPER NUMBER
----------	--------------

2873

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

21

Office Action Summary	Application No. 10/725,453	Applicant(s) TAKIZAWA ET AL.	
	Examiner Brandi N. Thomas	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-20 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


 RICKY MACK
 PRIMARY EXAMINER

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi et al. (5905255) in view of Sakamoto et al. (5499143).

Regarding claim 1, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus comprising: a body (2) that is to be driven in a direction of an optical axis of a lens (1) and to which said lens (1) is attached (col. 5, lines 54-58), a guide axis for guiding and allowing the body to move freely in said direction of an optical axis of the lens without turning (col. 5, lines 51-53 and 62-63), a driving coil (6a-6d and 7a-7d) that is flatly wound and attached to the body (2) providing a thrust on said body (2) parallel to the direction of the optical axis when a current is provided to said driving coil (6a-6d and 7a-7d) so that said body (2) moves together with the driving coil (6a-6d and 7a-7d) in the direction of the optical axis (col. 6, lines 14-18 and 53-67), and a driving magnet (3a and 3b) being disposed opposite side of the driving coil (6a-6d and 7a-7d) and along a direction of movement of the body (2) (col. 5, lines 40-43); wherein the driving magnet (3a and 3b) and the driving coil (6a-6d) are disposed substantially within a quadrant circumference of the lens (figure 7) but does not specifically disclose wherein the driving coil and the driving magnet are shaped in curved forms so as to conform to an outer shape of the lens. Sakamoto et al. discloses, in figure 1, a lens driver wherein the driving coil

Art Unit: 2873

(14) and the driving magnet (7) are shaped in curved forms so as to conform to an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the coils and magnets of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 2, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a yoke (5a-5d) curved along a shape of the driving magnet (3a and 3b) (col. 6, lines 5-7).

Regarding claim 3, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a main yoke (5a and 5b) and an opposite yoke (5c and 5d) that are disposed so as to face each other with the driving coil (6a-6d and 7a-7d) in between (figure 1) but does not specifically disclose wherein the main yoke and the opposite yoke are curved so as to match an outer shape of the lens. Sakamoto et al. discloses, in figure 1, a lens driver wherein the main yoke (6) and the opposite yoke (8) are curved so as to match an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the yokes of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 4, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, wherein a plurality of the driving coils (6a-6d and 7a-7d) are provided and disposed adjacent to one another along the moving direction of the body (2) to be driven (col. 6, lines 14-18 and 53-67).

Regarding claim 5, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, wherein the driving coil (6a-6d and 7a-7d) is disposed closer to the guide axis on the outer circumference of the lens (1) (figure 1).

Regarding claims 6-10, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a image capture apparatus comprising: a lens driver apparatus (figure 1), wherein the lens driver apparatus is disposed in a main casing (10) of the image capture apparatus (col. 5, lines 29-30).

Regarding claim 11, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus comprising: a body (2) that is to be along an optical axis of a lens (1) and to which the lens (1) is attached (col. 5, lines 54-58), said body (2) including a sleeve (8a-8d) and a member (9) for accommodating a guide axis (col. 5, lines 46-48); a guide axis for guiding and allowing the body to move freely in said direction of an optical axis of the lens (1) without turning so that the optical axis is fixed and guiding is performed without shake in the direction of movement (col. 5, lines 51-53 and 62-63), a driving coil (6a-6d and 7a-7d) that is flatly wound and attached to the body (2) via a coil fitting part at a position nearer to the sleeve (8a-8d) of the body (2) providing a thrust on said body (2) so that said body (2) moves together with the driving coil (6a-6d and 7a-7d) in the direction of the optical axis (col. 6, lines 14-18 and 53-67), and a driving magnet (3a and 3b) being disposed opposite side of the driving coil (6a-6d and 7a-7d) and along a direction of movement of the body (2) (col. 5, lines 40-43); wherein the driving magnet (3a and 3b) and the driving coil (6a-6d) are disposed substantially within a quadrant circumference of the lens (figure 7) but does not specifically disclose wherein the driving coil and the driving magnet are shaped in curved forms so as to conform to an outer shape of the lens about at least a portion of the optical axis and extending therealong. Sakamoto et al. discloses, in figure 1, a lens driver

Art Unit: 2873

wherein the driving coil (14) and the driving magnet (7) are shaped in curved forms so as to conform to an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the coils and magnets of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 12, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a yoke (5a-5d) curved along a shape of the driving magnet (3a and 3b) (col. 6, lines 5-7).

Regarding claim 13, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a main yoke (5a and 5b) and an opposite yoke (5c and 5d) that are disposed so as to face each other with the driving coil (6a-6d and 7a-7d) in between (figure 1) but does not specifically disclose wherein the main yoke and the opposite yoke are curved so as to match an outer shape of the lens. Sakamoto et al. discloses, in figure 1, a lens driver wherein the main yoke (6) and the opposite yoke (8) are curved so as to match an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the yokes of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 14, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, wherein a plurality of the driving coils (6a-6d and 7a-7d) are provided and disposed adjacent to one another along the moving direction of the body (2) to be driven (col. 6, lines 14-18 and 53-67).

Regarding claim 15, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, wherein the driving coil (6a-6d and 7a-7d) is disposed closer to the guide axis on the outer circumference of the lens (1) (figure 1).

Regarding claims 16, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a image capture apparatus comprising: a lens driver apparatus (figure 1), wherein the lens driver apparatus is disposed in a main casing (10) of the image capture apparatus (col. 5, lines 29-30).

Regarding claim 17, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus comprising: means for driving a body (2) along an optical axis of a lens (1) and to which said lens (1) is attached (col. 5, lines 54-58), means including a guide axis for guiding and allowing the body to move freely in the direction of an optical axis of the lens without turning (col. 5, lines 51-53 and 62-63), means, including a driving coil (6a-6d and 7a-7d) that is flatly wound and attached to the body (2), for providing a thrust to the body (2) for movement in the direction of the optical axis when said coil (6a-6d and 7a-7d) is energized (col. 6, lines 14-18 and 53-67), and a driving magnet (3a and 3b) being disposed opposite side of the driving coil (6a-6d and 7a-7d) and along a direction of movement of the body (2) (col. 5, lines 40-43); wherein the driving magnet (3a and 3b) and the driving coil (6a-6d) are disposed substantially within a quadrant circumference of the lens (figure 7) but does not specifically disclose wherein the driving coil and the driving magnet are shaped in curved forms so as to conform to an outer shape of the lens. Sakamoto et al. discloses, in figure 1, a lens driver wherein the driving coil (14) and the driving magnet (7) are shaped in curved forms so as to conform to an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the coils and

Art Unit: 2873

magnets of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 18, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a yoke (5a-5d) curved along a shape of the driving magnet (3a and 3b) (col. 6, lines 5-7).

Regarding claim 19, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, further comprising: a main yoke (5a and 5b) and an opposite yoke (5c and 5d) that are disposed so as to face each other with the driving coil (6a-6d and 7a-7d) in between (figure 1) but does not specifically disclose wherein the main yoke and the opposite yoke are curved so as to match an outer shape of the lens. Sakamoto et al. discloses, in figure 1, a lens driver wherein the main yoke (6) and the opposite yoke (8) are curved so as to match an outer shape of the lens (figure 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Wakabayashi et al. with the yokes of Sakamoto et al. for the purpose of less difficult movement of the lens and the body along the optical axis (col. 1, lines 60-67 and figure 1).

Regarding claim 20, Wakabayashi et al. discloses, in figures 1 and 7, and 9a, a lens driver apparatus, wherein a plurality of the driving coils (6a-6d and 7a-7d) are provided and disposed adjacent to one another along the moving direction of the body (2) to be driven (col. 6, lines 14-18 and 53-67).

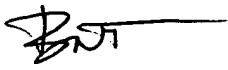
Art Unit: 2873

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N. Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on 7- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


BNT


RICKY MACK
PRIMARY EXAMINER